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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/490,983	01/24/2000	Mitsuru Adachi	960253CIP/HG	7883

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[REDACTED] EXAMINER

[REDACTED] LIN, ING HOUR

ART UNIT	PAPER NUMBER
1725	13

DATE MAILED: 06/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/490,983	Applicant(s) Adachi et al
Examiner Ing-Hour Lin	Art Unit 1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on Jan 24, 2000.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-57 is/are pending in the application.
- 4a) Of the above, claim(s) 16-29, 40, and 42-57 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-15, 30-39, and 41 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some* c) None of:
1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
- 4) Interview Summary (PTO-413) Paper No(s). _____
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____

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Part III DETAILED ACTION

election without traverse

1. Applicant's election without traverse of claims 1-15, 30-39, and 41 in Paper No. 9 is acknowledged.

Claim Objections

2. Claims 1 and 6 are objected to because of the following informalities: In claim 1, line 2, is "a" a typo of --an--? In claim 6, line 2, is "mangesium" a typo of --magnesium--? Appropriate correction is required.

Claim Rejections - 35 U.S.C. § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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4. Claims 30 and 36-38 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. "the molten metal" in claim 30 line 2, "the metal" in claim 36, line 7, and "the metal" in claim 38, line 2 lack antecedent basis.

103 rejection

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1-15, 30-39 and 41 are rejected under 35 U.S.C. § 103(a) as being unpatentable over EP 0392998 in view of Adachi et al.

EP '998 (col. 3, lines 5+) teaches the basic claimed method of shaping a semisolid metal, comprising: heating aluminum

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alloy to a liquid status at a temperature of about 700 °C; conveying the alloy onto an adjustable and tillable surface of a jig (cooling plate 2); collecting the semi-solid metal slurry (semiliquid aluminum alloy) in vessels; and forming casting component parts by conventional molding and die casting methods.

EP '998 fails to teach the use of a holding vessel and crystal grain refiner for controlling fine primary crystals in a semi-solid metal slurry. However, Adachi et al (column 4, lines 49+) teach the use of a holding vessel and crystal grain refiner in a method of manufacturing semisolid metal slurry for casting, comprising: pouring the molten metal including at least a portion of semi-solid state (fine primary crystal nuclei including Ti, B, Zn, Sr, Si, etc.) into a holding vessel heated by electric coil; and controlling the liquid-phase content and globular crystal size through heat treatment including heating temperature and holding time for the purpose of improving effective casting and enhancing cast mechanical property. Further, Adachi et al the use of hypo-eutectic aluminum alloys in the semi-solid metal processing method.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided EP '998

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with a holding vessel and crystal grain refiner as taught by Adachi et al in order to improve the effective casting and to enhance cast mechanical property.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner I.-H. Lin whose telephone number is (703) 308-3442 or Supervisor Tom Dunn whose telephone number is (703) 308-3318.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1148.

I.-H. Lin *J.H.L.*

May 30, 2003



TOM DUNN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700